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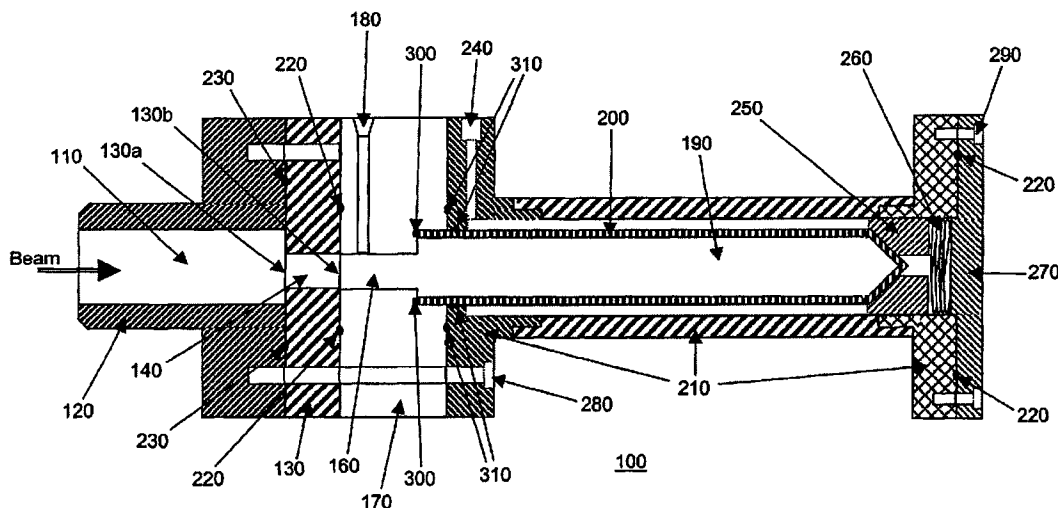
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(54) Title: APPARATUS AND METHOD FOR GENERATING ¹⁸F-FLUORIDE BY ION BEAMS



(57) **Abstract:** A system and method for producing ¹⁸F-Fluoride by using a particle beam to irradiate conversion medium in gaseous or liquid form. The irradiated conversion medium is contained in a chamber surrounded by a Fluoride adsorbing material to which the produced ¹⁸F-Fluoride adheres. The adsorption properties of the Fluoride adsorbing material are manipulated by an adsorption enhancing/decreasing element. A solvent dissolves the produced ¹⁸F-Fluoride off of the Fluoride adsorbing material while it is in the chamber. The solvent is then processed to obtain the ¹⁸F-Fluoride.



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